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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/375,333 08/16/99 OPPERMANN

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EXAMINER

ROMEIO, D

ART UNIT

PAPER NUMBER

1647

DATE MAILED:

07/02/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

# Office Action Summary

Application No.  
09/375,333

Applicant(s)  
Oppermann et al.

Examiner  
David Romeo

Art Unit  
1647



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 Aug 1999
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claims 1-19 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 20) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Election/Restriction*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-5, to the extent that they are drawn to a biologically active TGF- $\beta$  family  
5 member fusion protein comprising a heterologous tissue targeting domain that  
binds to a cell surface molecule on an osteoprogenitor cell, classified in class 530,  
subclass 350.
  - II. Claims 1-5, to the extent that they are drawn to a biologically active TGF- $\beta$  family  
10 member fusion protein comprising a heterologous tissue targeting domain that  
binds to a cell surface molecule on a chondrocyte, classified in class 530,  
subclass 350.
  - III. Claims 1-5, to the extent that they are drawn to a biologically active TGF- $\beta$  family  
member fusion protein comprising a molecular targeting domain, classified in  
class 530, subclass 350.
  - 15 IV. Claims 1-5, to the extent that they are drawn to a biologically active TGF- $\beta$  family  
member fusion protein comprising a heterologous metal binding domain, classified  
in class 530, subclass 350.

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- V. Claims 1-5, to the extent that they are drawn to a biologically active TGF- $\beta$  family member fusion protein comprising a heterologous protein binding domain, classified in class 530, subclass 350.
- 5 VI. Claims 1-5, to the extent that they are drawn to a biologically active TGF- $\beta$  family member fusion protein comprising a heterologous ceramic binding domain, classified in class 530, subclass 350.
- VII. Claims 1-5, to the extent that they are drawn to a biologically active TGF- $\beta$  family member fusion protein comprising a heterologous HAP binding domain, classified in class 530, subclass 350.
- 10 VIII. Claims 1-5, to the extent that they are drawn to a biologically active TGF- $\beta$  family member fusion protein comprising a heterologous collagen domain, classified in class 530, subclass 350.
- IX. Claims 6-8, to the extent that they are drawn to a latent TGF- $\beta$  family member comprising a cleavable leader sequence, classified in class 530, subclass 350.
- 15 X. Claims 6-9, to the extent that they are drawn to a latent TGF- $\beta$  family member comprising a heterologous cleavable leader sequence, classified in class 530, subclass 350.

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- XI. Claims 10-16, to the extent that they are drawn to a biologically active TGF- $\beta$  family member comprising a truncated leader sequence, classified in class 530, subclass 350.
- XII. Claim 17, to the extent that it is drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a TGF- $\beta$  family member fusion protein, and a second subunit comprising a TGF- $\beta$  family member fusion protein different from that of the first subunit, classified in class 530, subclass 350.
- XIII. Claims 17, 18, to the extent that they are drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type TGF- $\beta$ 1 subunit, classified in class 530, subclass 350.
- XIV. Claims 17, 18, to the extent that they are drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type TGF- $\beta$ 2 subunit, classified in class 530, subclass 350.
- XV. Claims 17, 18, to the extent that they are drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a

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TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type TGF- $\beta$ 3 subunit, classified in class 530, subclass 350.

XVI. Claims 17, 18, to the extent that they are drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type TGF- $\beta$ 4 subunit, classified in class 530, subclass 350.

XVII. Claims 17, 18, to the extent that they are drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type TGF- $\beta$ 5 subunit, classified in class 530, subclass 350.

XVIII. Claims 17, 18, to the extent that they are drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type dpp subunit, classified in class 530, subclass 350.

XIX. Claims 17, 18, to the extent that they are drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type Vg-1 subunit, classified in class 530, subclass 350.

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XX. Claims 17, 18, to the extent that they are drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type Vgr-1 subunit, classified in class 530, subclass 350.

5 XXI. Claims 17, 18, to the extent that they are drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type 60A subunit, classified in class 530, subclass 350.

10 XXII. Claims 17, 18, to the extent that they are drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type BMP-2A subunit, classified in class 530, subclass 350.

15 XXIII. Claims 17, 18, to the extent that they are drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type BMP-3 subunit, classified in class 530, subclass 350.

XXIV. Claims 17, 18, to the extent that they are drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a TGF- $\beta$  family member fusion protein, and a second subunit

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comprising a wild type BMP-4 subunit, classified in class 530,  
subclass 350.

XXV. Claims 17, 18, to the extent that they are drawn to a biologically active  
heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a  
5 TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type  
BMP-5 subunit, classified in class 530, subclass 350.

XXVI. Claims 17, 18, to the extent that they are drawn to a biologically active  
heterodimer of TGF- $\beta$  family member proteins comprising a first subunit  
being a TGF- $\beta$  family member fusion protein, and a second subunit  
10 comprising a wild type BMP-6 subunit, classified in class 530,  
subclass 350.

XXVII. Claims 17, 18, to the extent that they are drawn to a biologically active  
heterodimer of TGF- $\beta$  family member proteins comprising a first subunit  
being a TGF- $\beta$  family member fusion protein, and a second subunit  
15 comprising a wild type Dorsalin subunit, classified in class 530,  
subclass 350.

XXVIII. Claims 17, 18, to the extent that they are drawn to a biologically active  
heterodimer of TGF- $\beta$  family member proteins comprising a first subunit



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being a TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type OP-1 subunit, classified in class 530, subclass 350.

XXIX. Claims 17, 18, to the extent that they are drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type OP-2 subunit, classified in class 530, subclass 350.

XXX. Claims 17, 18, to the extent that they are drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type OP-3 subunit, classified in class 530, subclass 350.

XXXI. Claims 17, 18, to the extent that they are drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type GDF-1 subunit, classified in class 530, subclass 350.

XXXII. Claims 17, 18, to the extent that they are drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type GDF-3 subunit, classified in class 530, subclass 350.

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XXXIII. Claims 17, 18, to the extent that they are drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type GDF-9 subunit, classified in class 530, subclass 350.

5 XXXIV. Claims 17, 18, to the extent that they are drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type Inhibin  $\alpha$  subunit, classified in class 530, subclass 350.

10 XXXIV. Claims 17, 18, to the extent that they are drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type Inhibin  $\beta$ A subunit, classified in class 530, subclass 350.

15 XXXV. Claims 17, 18, to the extent that they are drawn to a biologically active heterodimer of TGF- $\beta$  family member proteins comprising a first subunit being a TGF- $\beta$  family member fusion protein, and a second subunit comprising a wild type Inhibin  $\beta$ B subunit, classified in class 530, subclass 350.

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XXXVI. Claim 19, a method of purifying a heterodimer of TGF- $\beta$  family proteins, classified in class 530, subclass 412.

2. The inventions are distinct, each from the other because of the following reasons:

3. The following pairwise combinations of products are independent and distinct, wherein

5 neither member of a pair is required for the production or use of the other, and wherein each of the pair can be manufactured independently of the other and used for independent and distinct purposes: I and each of II-XXXV; II and each of III-XXXV; III and each of IV-XXXV; IV and each of V-XXXV; V and each of VI-XXXV; VI and each of VII-XXXV; VII and each of VIII-XXXV; VIII and each of IX-XXXV; IX and each of X-XXXV; X and each of XI-XXXV; XI and  
10 each of XII-XXXV; XII and each of XIII-XXXV; XIII and each of XIV-XXXV; XIV and each of XV-XXXV; XV and each of XVI-XXXV; XVI and each of XVII-XXXV; XVII and each of XVIII-XXXV; XVIII and each of XIX-XXXV; XIX and each of XX-XXXV; XX and each of XXI-XXXV; XXI and each of XXII-XXXV; XXII and each of XXIII-XXXV; XXIII and each of XXIV-XXXV; XXIV and each of XXV-XXXV; XXV and each of XXVI-XXXV; XXVI and  
15 each of XXVII-XXXV; XXVII and each of XXVIII-XXXV; XXVIII and each of XXIX-XXXV; XXIX and each of XXX-XXXV; XXX and each of XXXI-XXXV; XXXI and each of XXXII-XXXV; XXXII and each of XXXIII-XXXV; XXXIV and each of XXXV.

4. Inventions XXXVI and each of I-XXXV are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the

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process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)).

In the instant case XXXVI can be used to make the first homodimer or the second homodimer.

5. Because these inventions are distinct for the reasons given above and have acquired a  
5 separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

6. Because these inventions are distinct for the reasons given above and the searches required are not coextensive, restriction for examination purposes as indicated is proper.

7. Because these inventions are distinct for the reasons given above and have acquired a  
10 separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

8. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

15 9. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

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ANY INQUIRY CONCERNING THIS COMMUNICATION OR EARLIER COMMUNICATIONS FROM THE EXAMINER SHOULD BE DIRECTED TO DAVID S. ROMEO WHOSE TELEPHONE NUMBER IS (703) 305-4050. THE EXAMINER CAN NORMALLY BE REACHED ON MONDAY THROUGH FRIDAY FROM 7:30 A.M. TO 4:00 P.M.

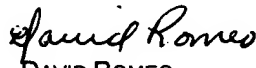
5 IF ATTEMPTS TO REACH THE EXAMINER BY TELEPHONE ARE UNSUCCESSFUL, THE EXAMINER'S SUPERVISOR, GARY KUNZ, CAN BE REACHED ON (703) 308-4623.

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FAXED DRAFT OR INFORMAL COMMUNICATIONS SHOULD BE DIRECTED TO THE EXAMINER AT (703) 308-0294.

ANY INQUIRY OF A GENERAL NATURE OR RELATING TO THE STATUS OF THIS APPLICATION OR PROCEEDING SHOULD BE DIRECTED TO THE GROUP RECEPTIONIST WHOSE TELEPHONE NUMBER IS (703) 308-0196.

10

  
DAVID ROMEO  
PRIMARY EXAMINER  
ART UNIT 1647

JULY 1, 2001